Complete Summary

GUIDELINE TITLE

Evidence-based clinical practice guideline. Cardiovascular health for women: primary prevention. Second edition.

BIBLIOGRAPHIC SOURCE(S)

Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN). Cardiovascular health for women: primary prevention. Evidence-based clinical practice guideline. 2nd ed. Washington (DC): Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN); 2003. 57 p. [157 references]

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Cardiovascular disease or events, including myocardial infarction, congestive heart failure, peripheral vascular disease, aortic aneurysms, stroke, and other conditions

GUIDELINE CATEGORY

Prevention
Risk Assessment
Screening

CLINICAL SPECIALTY

Cardiology
Family Practice
Internal Medicine
Nursing

Obstetrics and Gynecology
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Health Care Providers
Hospitals
Nurses
Public Health Departments

GUIDELINE OBJECTIVE(S)

- To assist nurses in applying evidence-based knowledge in the care of women to promote cardiovascular health from adolescence through adulthood.
- To provide the registered nurse (RN) or advanced practice registered nurse (APRN) in acute and ambulatory care settings with information necessary to accomplish the following objectives:
    - Recognize the prevalence of and risk for cardiovascular disease (CVD) in women
    - Routinely perform cardiovascular disease risk assessment
    - Implement strategies targeted at promoting cardiovascular health through risk reduction.

TARGET POPULATION

Women, from adolescence through adulthood seen in community, primary, and acute care settings and wherever health education is disseminated

Note: The strategies presented in this Guideline may also benefit families, men, and children. Selected elements of this Guideline may be appropriate for women with a diagnosis of cardiovascular disease.

INTERVENTIONS AND PRACTICES CONSIDERED

1. Screening and risk assessment
    - Routine screening
    - Periodic screening
    - Screening and risk assessment in special populations (women with diabetes, midlife and older women; vulnerable populations; women with metabolic syndrome)
2. General health promotion strategies
    - Smoking cessation
    - Heart-healthy nutrition
    - Weight management
    - Physical activity
    - Motivation, adherence and awareness
    - Stress Management
3. Health promotion strategies specific to special populations, including women with hypertension or borderline-high blood pressure, women with diabetes, older women, adolescent girls, vulnerable populations, women with metabolic syndrome

4. Other therapies and emerging clinical tools
    - Vitamins, nutrients, dietary supplements, and dietary components (discussed but not recommended)
        - Vitamin E
        - Vitamins E and C
        - Beta carotene
        - Lutein
        - Garlic
        - Soy/isoflavones
    - Pharmaceuticals, biochemical assays, and complementary therapies
        - Estrogen (considered but not recommended)
        - Aspirin
        - Massage
        - Biofeedback
        - Homocysteine levels
        - C-reactive protein

MAJOR OUTCOMES CONSIDERED

Efficacy of primary prevention activities on reducing the risk and incidence of cardiovascular disease in women and supporting cardiovascular health

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

I: Evidence obtained from at least one properly designed randomized, controlled trial or meta-analyses of randomized, controlled trials.

II-1: Evidence obtained from well-designed controlled trials without randomization.

II-2: Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group.

II-3: Evidence from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of the introduction of penicillin treatment in the 1940s) could also be regarded as this type of evidence.

III: Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

A system and tool for scoring the literature was developed based on the method for literature analysis presented in the American Nurses Association Manual to Develop Guidelines (Marek, 1995). Using this framework, each study reviewed by the Guideline development team was evaluated according to the following eight categories:

- Problem or question studied: Clearly stated, significant and relevant problem
- Sampling: Representative, <20% dropout, random selection
- Measurement: Tools/method appropriate, reliable and valid
- Internal validity: Accurate conclusions about covariation
- External validity: Valid conclusions about generalizability
- Construct validity: Appropriate independent and dependent variables identified
- Statistical conclusion validity: Statistical significance supported by data ($p \leq .05$)
- Justification for conclusions: Causal conclusions justified

As the evidence-based clinical practice guideline was further developed, the quality of evidence supporting clinical practice recommendations was determined by team consensus using the U.S. Preventive Services Task Force (1996) Guide to Clinical Preventive Services quality of evidence rating scale.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) template for guideline development is based on the framework delineated in the American Nurses Association (ANA) Manual to Develop Guidelines (Marek KD, American Nurses Association Committee on Nursing Practices, Standards and

Guidelines. Washington [DC]: American Nurses Publishing, American Nurses Foundation, American Nurses Association, 1995). The American Nurses Association Manual to Develop Guidelines models its process on that of the Agency for Healthcare Research Quality (AHRQ), formerly the Agency for Health Care Policy and Research (AHCPR).

Guideline development began in fall 2000 with a call for AWHONN expert member volunteers to serve on the Evidence-Based Clinical Practice Guideline Development Team. Team members were appointed in late 2000 and participated throughout 2001 in teleconferences, meetings, and literature review, evaluation, and scoring.

In 2003, a subgroup of the guideline team reviewed additional literature and selectively updated sections of the guideline pertaining to hormone replacement therapy, aspirin use, inflammatory markers, and women with diabetes.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Comparison with Guidelines from Other Groups
External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

The Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) Cardiovascular Health for Women Advisory Panel reviewed this guideline.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Quality of Evidence Ratings (I, II-1, II-2, II-3, III) are defined at the end of the "Major Recommendations" field.

<u>Screening and Risk Assessment</u>

All women should be screened for risk factors for cardiovascular disease (CVD). The interrelationship of risk factors affects an individual's risk of disease. Several tools have been designed to help health care professionals create an individualized risk profile (see Appendices A and B in the original guideline document).

Routine Screening

All Women

At every health care visit or whenever possible, a cardiovascular assessment should address the following elements (Pearson et al., 2002 Evidence Rating: III):

a. Cigarette smoking or exposure to passive cigarette smoke at home or work. Ask, "Do you smoke?" and "Are you exposed to secondhand smoke in your environment?" (Bosetti et al., 1999; Kawachi et al., 1994; Prescott et al., 1998; Shinton & Beevers, 1989; Vriz et al., 1997; Howard et al., 1998; Kawachi et al., 1997; Wilson et al., 1998; He et al., 1999: Evidence Rating: II-2) (Public Health Service, 2001; He et al., 1999; Krummel et al., 2001; Taylor et al., 1998: Evidence Rating: III)
b. Weight/basal metabolic weight (BMI)/waist circumference (Jakicic et al., 1999; Vuksan et al., 1999: Evidence Rating: I) (Olson et al., 2000; Anderssen et al., 1998; Folsom et al., 2000; Uusitupa et al., 2000: Evidence Rating:II-2) (" "Clinical guidelines on the identification," 1998; Mosca et al., 1999; Rippe, Crossley, & Ringer, 1998; Krauss et al., 2000; Pearson et al., 2002: Evidence Rating: III)
c. Diet/nutrition, including caloric intake, types and amounts of fats eaten, food groups eaten (e.g., fiber, sodium, potassium, sucrose), alcohol intake, and use of nutritional supplements (Krummel et al., 2001; Mosca et al., 1999; Krauss et al., 2000: Evidence Rating: III)
d. Physical activity level (Krummel et al., 2001; Mosca et al., 1999; Collins et al., 1999; American Heart Association [AHA], 2001; Eyler et al., 1997; Mosca et al., 1997; Sternfeld et al., 1999; Suzuki et al., 1998: Evidence Rating: III)
e. Blood pressure (Wilson et al., 1998: Evidence Rating: II-2) (National Heart, Lung, and Blood Institute [NHLBI], 1997: Evidence Rating: III)
f. Family history

   After initial screening, update on a routine basis.

   (Krauss et al., 2000; National Heart, Lung, and Blood Institute [NHLBI], 1997; "Screening for type 2 diabetes," 2003: Evidence Rating: III)

g. Age (Casper et al., 2000: Evidence Rating: II-2) (Wenger, 2001; Krauss et al., 2000: Evidence Rating: III)
h. Racial/ethnic, cultural and socioeconomic factors (Casper et al., 2000: Evidence Rating: II-1) (American Heart Association [AHA], 2000; Cooper et al., 2000: Evidence Rating: III)
i. Stress and other psychosocial factors
   - Assess for the presence of stressful situations and response to stress.
   - Assess whether the woman has social support and evaluate for social isolation if indicated.

   (Mosca et al., 1999; Rozanski, Blumenthal, & Kaplan, 1999; Krummel et al., 2001: Evidence Rating: III)

Periodic Screening

1. In all adults ages 20 years or older, a fasting lipoprotein profile (total cholesterol, low-density lipoprotein [LDL], high-density lipoprotein [HDL], and triglycerides) should be obtained once every 5 years. (Wilson et al., 1998: Evidence Rating: II-2) ("Executive summary of the third report", 2001; Krummel et al., 2001: Evidence Rating: III)
2. A follow-up lipoprotein profile should be obtained for appropriate management based on LDL levels when the testing opportunity is nonfasting and total cholesterol levels are 200mg/dl or higher or HDL levels are below 40 mg/dl. (In nonfasting samples, only the values for total cholesterol and HDL cholesterol are usable.) (Austin, Hokanson, & Edwards, 1998: Evidence Rating: I) (Edmond & Zareba, 1997; Wilson et al., 1998: Evidence Rating: II-2) ("Executive summary of the third report", 2001: Evidence Rating: III)
3. Consider early cholesterol testing and blood pressure screening (i.e., before age 20 years). (Schwandt et al., 1999: Evidence Rating: II-2)
4. Beginning at age 45, individuals should be screened for diabetes every 3 years (see Appendix A in the original guideline document). Testing at an earlier age, more frequent testing, or both should be considered if any of the following diabetes risk factors are present:
    a. Family history of diabetes (parents or siblings with diabetes)
    b. Overweight (BMI $\geq$25 kg/m^2)
    c. Habitual physical inactivity
    d. African American, Hispanic American, Native American, Asian American, or Pacific Islander race/ethnicity
    e. Previously identified fasting glucose $\geq$110mg/dl or 2-hour glucose tolerance test $\geq$140mg/dl
    f. Hypertension ($\geq$140/90 mmHg)
    g. HDL cholesterol $\leq$35 mg/dl and/or a triglyceride level $\geq$250 mg/dl
    h. History of gestational diabetes or delivery of a baby weighing more than 9 lb
    i. Polycystic ovary syndrome

    ("Screening for type 2 diabetes," 2003; "Executive summary of the third report", 2001; Report of the Expert Committee on the Diagnosis and Classification of Diabetes Mellitus, 1997: Evidence Rating: III)

Screening and Risk Assessment in Special Populations

Women with Diabetes

1. Assess women with type-2 diabetes for other risk factors of CVD such as hyperlipidemia, hypertension, and excess body fat. (Vuksan et al., 1999; Lee et al., 2000: Evidence Rating: I) (Uusitupa et al., 2000; Hu et al., 2001: Evidence Rating: II-2) ("Executive summary of the third report", 2001: Evidence Rating: III)
2. Every year, assess lipid values with fasting serum cholesterol, triglyceride, HDL cholesterol, and calculated LDL cholesterol measurements. Borderline or abnormal values should be confirmed by repeat testing ("Screening for type 2 diabetes," 2003: Evidence Rating: III). If values fall in the lower-risk levels, assessment may be repeated every 2 years instead of annually. ("Standards of medical care," 2003: Evidence Rating: III)

Midlife and Older Women

1. Screen for widening pulse pressure as women reach midlife (approximately ages 45-65 years) and beyond. Pulse pressure refers to the difference between systolic and diastolic blood pressure. (Pulse pressures >60mm/Hg are considered abnormal). (Antikainen et al., 2000; Chae et al., 1999: Evidence Rating: II-2)
2. For older women, assess blood pressure in both the standing and sitting or supine position. (National Heart, Lung, and Blood Institute [NHLBI], 1997: Evidence Rating: III)
3. For older women, confirm an elevated blood pressure result in the office by blood pressure readings obtained outside the office. (National Heart, Lung, and Blood Institute [NHLBI], 1997: Evidence Rating: III)
4. Assess older women for raised systolic blood pressure (>160 mmHg) as well as hypertension. (Psaty et al., 1999: Evidence Rating: II-2)
5. Treat systolic hypertension in older women even when diastolic blood pressure is below 90 mmHg. (Perry et al., 2000: Evidence Rating: I) (National Heart, Lung, and Blood Institute [NHLBI], 1997: Evidence Rating: III)

Vulnerable Populations

Evaluate a woman's ability to access primary and secondary cardiovascular services by assessing the following:

a. Socioeconomic status
b. Cultural health beliefs
c. Environmental factors (rural vs. urban or suburban)
d. Availability of health care
e. Safety issues
f. Transportation access

(Casper et al., 2000; Cooper et al., 2000; Psaty et al., 1999: Evidence Rating: II-2)

Women with Metabolic Syndrome

Assess women for the presence of 3 or more of these factors: central obesity (waist measurement >35 inches); elevated triglycerides ($\geq$150 mg/dl); insulin resistance (fasting glucose $\geq$110 mg/dl); low HDL (<40mg/dl); hypertension ($\geq$130/85 mmHg). (Pearson et al., 2003: Evidence Rating: III)

Health Promotion Strategies

General Recommendations

Smoking Cessation

1. Assess a woman's ability and desire to quit smoking.
    a. Women who express willingness to quit smoking should be offered smoking cessation advice.
    b. Women who express doubt or seem unwilling to quit smoking should be provided counseling aimed at enhancing motivation to quit.

(Design of the Women's Health Initiative clinical trial, 1998: Evidence Rating: III)

2. All women who smoke should be counseled about smoking cessation or referred for counseling. (Public Health Service, 2001: Evidence Rating: III)
3. Advise women that smoking cessation is optimal. If cessation is not feasible, advise women that reduction may be a goal. (He et al., 1999; Howard et al., 1998; Kawachi et al., 1997: Evidence Rating: II-2)
4. Enhance motivation to quit smoking by helping a woman accomplish the following:
    a. Identify why quitting is personally relevant
    b. Review risks of smoking
    c. Identify potential benefits of stopping tobacco use
    d. Identify barriers to quitting smoking and suggest possible solutions

    (Public Health Service, 2001: Evidence Rating: III)

5. Women attempting smoking cessation should be offered the following:
    a. Ongoing counseling
    b. Provision of social support as part of treatment
    c. Help in securing social support outside of treatment
    d. Pharmacotherapy, if there are no contraindications
    e. Follow-up assessment that takes into account the following:
        - Relapse prevention in women who are abstinent
        - Repeat interventions in women unable to quit

    (Public Health Service, 2001: Evidence Rating: III)

Heart Healthy Nutrition

1. Provide heart-healthy dietary guidelines for all women, including those with dyslipidemia. (Allison et al., 1999: Evidence Rating: II-1)
2. To reduce risk for coronary heart disease (CHD), the National Cholesterol Education Program Adult Treatment Panel III (NCEP ATP-III) recommends a multifaceted approach (see also Appendix B in the original guideline document):
    a. Distinguish between different types of fats in diet, reducing intake of saturated fats and trans-fats and adding polyunsaturated and monounsaturated fats.
    b. Eat two servings of fish each week. Diet should also contain omega-3 fatty acids (found in fatty fish such as tuna and salmon) and omega-6 fatty acids (found in plant sources such as canola or nuts).

        (Note: Pregnant women, nursing mothers, and children should be advised to avoid eating shark, swordfish, king mackerel and tile fish)

    c. Maintain total fiber intake in foods between 20 and 30 g per day.
    d. Increase intake of fruits and vegetables to at least five servings per day.
    e. Limit sodium intake to no more than 2,400 mgs/per day which is equivalent to about 1 tsp of table salt.

f. Limit alcohol intake to no more than one drink per day (one drink equals one 12-oz glass of beer, 4-oz or 118 ml of wine, 1.5 oz of 80-proof liquor, or 1 oz 100-proof liquor).
g. Maintain adequate potassium intake (60-100 mmol or 2-2.5 g per day) by eating such potassium-rich foods as fish, potatoes, bananas, apricots, corn, watermelon, and raisins. (For example, a medium-sized baked potato has 750 mg of potassium and a banana has 450 mg.)
h. Limit intake of foods high in sugar.

(Vuksan et al., 1999; Kris-Etherton et al., 1999; Appel et al., 1997; Sacks et al., 2001; Whelton et al., 1997: Evidence Rating: I) (Hu et al., 2002; Hu et al., 1999; Kiechl et al., 1998; Di Castelnuovo et al., 2002; Hajjar et al., 2001; Archer et al., 1998: Evidence Rating: II-2) ("Executive summary of the third report", 2001; Krauss et al., 2000; Food and Drug Administration [FDA], 2001; Pearson et al., 2002: Evidence Rating: III)

Weight Management

1. Assess for readiness and motivation to lose weight. ("Clinical guidelines on the identification," 1998: Evidence Rating: III)
2. Develop an individualized, culturally-sensitive nutrition plan. (Krummel et al., 2001: Evidence Rating: III)
3. Emphasize the importance of restricting calorie intake as well as maintaining a low-fat diet to achieve weight loss. (Hooper et al., 2001; Mosca et al., 1999; "Clinical guidelines on the identification," 1998: Evidence Rating: III)
4. Recommend an initial weight loss of 5 to 10% of body weight within a year when weight loss is indicated. (Rippe et al., 1998; Pearson et al., 2002: Evidence Rating: III)
5. Counsel obese and overweight women about the risks of weight cycling--repeated episodes of weight loss and gain--and the benefits of adopting long-term healthy eating habits. (Olson et al., 2000: Evidence Rating: II-2)
6. Provide information on the benefits of a well-balanced, diversified diet to lose weight and reduce the risk of CVD. (Stevens et al., 2001: Evidence Rating: I) (Bao et al., 1998: Evidence Rating: II-1) (Moore et al., 2000: Evidence Rating: II-2) ("Clinical guidelines on the identification," 1998; Rippe et al., 1998: Evidence Rating: III)
7. Counsel overweight women that weight loss reduces both short-term and long-term incidence of hypertension. (He et al., 2000: Evidence Rating: I)
8. Counsel women that increasing lifestyle physical activities, when combined with other health promotion actions such as diet, can facilitate weight loss, improve blood pressure, and improve serum cholesterol. (Andersen et al., 1999; Blumenthal et al., 2000; Stevens et al., 2001: Evidence Rating: I) (Gordon, Scott, & Levine, 1997: Evidence Rating: II-1) (Nolte, Nowson, & Dyke, 1997: Evidence Rating: II-2)

Physical Activity

1. Assess the woman's readiness, ability, and opportunities to incorporate physical activity into her daily schedule. (Dunn et al., 1999: Evidence Rating: I) (Krummel et al., 2001; Pearson et al., 2002: Evidence Rating: III)
2. Counsel women that moderate-intensity activity, including brisk walking, is associated with substantial reduction in cardiovascular risk and decreases the

risk of CHD mortality by improving both cholesterol and blood pressure profiles. Counseling should include the following:

a. Women should participate in 30 minutes of moderate-intensity physical activity at least 5 days per week.
b. The duration of activity is more important than the pace.

(Dunn et al., 1999; Manson et al., 1999; Sunami et al., 1999; Stefanick et al., 1998: Evidence Rating: I) (Allison et al., 1999: Evidence Rating: II-1) (Bond et al., 1999; Wilbur et al., 1999: Evidence Rating: II-2) (Centers for Disease Control and Prevention [CDC], 1999; Pearson et al., 2002; Eyler et al., 1997; Krummel et al., 2001; Mosca et al., 1999; Sternfeld et al., 1999; Suzuki et al., 1998: Evidence Rating: III)

Motivation, Adherence and Awareness

1. Encourage adherence to diet and exercise regimens through one or more of the following:
    a. Explicit patient instruction
    b. Prompts to help patients remember treatment regimens
    c. Instructions on self-monitoring
    d. Regular visits to health care professionals for individual guidance
    e. Continual support
    f. Reinforced counseling
    g. Group activities
    h. Increased visits for patients unable to achieve treatment goals.

    (Uusitupa et al., 2000: Evidence Rating: II-2) ("Executive summary of the third report", 2001: Evidence Rating: III)

2. For women who have little time or desire to prepare food according to the outline for good cardiovascular health or who are seeking convenience, consider recommending packaged prepared meals that meet American Heart Association (AHA) heart-healthy guidelines. However, the cost of such meals should be taken into account. (Chait et al., 1999; Haynes et al., 1999; McCarron et al., 1997: Evidence Rating: I) (Haynes et al., 1999; McCarron et al., 1998: Evidence Rating: II-1)
3. Provide results of cholesterol testing. (Aubin et al., 1998: Evidence Rating: II-1)
4. Educate women about the signs and symptoms of cardiovascular events. (Mosca & Hayes, 2001: Evidence Rating: III) (Mosca et al., 2000)
5. Support community health intervention programs to decrease cardiovascular risk factors among women. (Baxter et al., 1997: Evidence Rating: II-3)

Stress Management

1. Counsel women that a variety of stress management strategies used together may help lower blood pressure. (Batey et al., 2000: Evidence Rating: I) (Spence et al., 1999: Evidence Rating: III)
2. Advise women that mental stress may be associated with compromised compliance in the vessel wall. (Matthews et al., 1998: Evidence Rating: I)
3. Consider treatment or referral for treatment of depression. (Mosca et al., 1999; Ortho-Gomer, Chesney, & Wenger, 1998: Evidence Rating: III)

4. Assess resources for social support. Encourage socially isolated women to participate in social activities or volunteer work. (Uchino & Garvey, 1997: Evidence Rating: I) (Blumenthal et al., 1997: Evidence Rating: III)
5. Consider recommending transcendental meditation as a method for stress management to decrease cardiovascular risk. (Castillo-Richmond et al., 2000: Evidence Rating: I) (Schneider et al., 1998: Evidence Rating: II-2)
6. Educate women that feelings of anger and hostility can contribute to higher levels of cholesterol. (Suarez, Bates, & Harralson, 1998: Evidence Rating: III)

Health Promotion Strategies in Special Populations

Women with Hypertension or Borderline-High Blood Pressure

1. Counsel women about specific dietary and lifestyle modifications to decrease blood pressure, including the following:
    a. A healthy diet, high in fruits and vegetables and low in saturated fat
    b. Adequate dietary potassium intake
    c. Reduction of dietary sodium
    d. Increased fiber intake

    (Svetkey et al., 1999; Appel et al., 1997; Sacks et al., 1999; Whelton et al., 1997; Sacks et al., 2001; Vuksan et al., 1999: Evidence Rating: I) (Hajjar et al., 2001: Evidence Rating: II-2) ("Executive summary of the third report", 2001: Evidence Rating: III)

2. Educate women that anxiety and depression may contribute to hypertension. (Jonas, Franks, & Ingram, 1997: Evidence Rating: III)

Women with Diabetes

Counsel women who have type-2 diabetes about the benefits of the following:

a. Blood glucose control: average preprandial, 80 to 120 mg/dl; average bedtime, 100 to 140 mg/dl; and hemoglobin A1c (%) less than 7
b. Weight management
c. Increased physical activity

    (Note: Screening exercise stress testing may be advised prior to engaging in an exercise program.)

d. Maintenance of blood pressure less than 130/80 mmHg
e. Maintenance of LDL level less than 100 mg/dl
f. Aspirin
g. Smoking cessation

(Hu et al., 2001; Moore et al., 2000: Evidence Rating: II-2) ("Screening for type 2 diabetes," 2003; Colwell, 2003; "Standards of medical care," 2003; Grundy et al., 1998; Pearson et al., 2002; "Executive summary of the Third Report," 2001: Evidence Rating: III)

Older Women

1. Counsel older women about the benefits of low-intensity structured aerobic activity in lowering serum lipid levels. (Ewart et al., 1998; Sunami et al., 1999: Evidence Rating: I) (Boreham et al., 1997: Evidence Rating: III)
2. Postmenopausal women may consider omega-3 fatty acid supplementation or eating fish high in omega-3 fatty acids (such as tuna and salmon) to improve cholesterol profile. (Stark et al., 2000: Evidence Rating: I)

Adolescent Girls

Counsel adolescent girls that being physically active is associated with lower body weight/body fat, lower total cholesterol levels, decreased blood pressure, and improved cardiorespiratory fitness. (Ewart et al., 1998: Evidence Rating: I) (Schmidt, Walkuski, & Stensel, 1998; Boreham et al., 1997: Evidence Rating: III)

Vulnerable Populations

Support programs and community-based initiatives that:

a. Increase access to cardiovascular health services
b. Promote a heart-healthy lifestyle that includes
    - affordable, healthy food
    - safe recreational facilities
    - freedom from discrimination

(Casper et al., 2000: Evidence Rating: II-2)

Women with Metabolic Syndrome

1. Monitor blood glucose, lipoproteins and blood pressure. Recommend lifestyle modification to achieve ideal body weight that includes dietary modifications and regular physical exercise. Treat hyperlipidemia and hypertension according to the most recent guidelines, recognizing that some antihypertensive agents may exacerbate insulin resistance and should be avoided. ("Executive Summary of the Third Report," 2001 : Evidence Rating: III)
2. Measuring hs-C-reactive protein (CRP) in women with metabolic syndrome is reasonable and may be considered. (Ridker et al., 2003: Evidence Rating: II-2)

Other Therapies and Emerging Clinical Tools

Vitamins, Nutrients, Dietary Supplements, and Dietary Components

Vitamin E

There is currently no basis for recommending vitamin E supplementation to women to reduce their risk for cardiovascular events. (Miller et al., 1997: Evidence Rating: I) (Koh et al., 1999; Mottram, Shige, & Nestel, 1999: Evidence Rating: II-1)

Vitamins E and C

In women who smoke, there is currently no basis for recommending vitamin E or C supplementation to reduce cardiovascular risk. (Fuller, May, & Martin, 2000: Evidence Rating: II-1)

Beta Carotene

There are no specific recommendations for beta carotene supplementation at this time. (Lee et al., 1999; Miller et al., 1997; McKay et al., 2000: Evidence Rating: I)

Lutein

Although there are currently no formal recommendations for lutein supplementation, preliminary research is promising. (Dwyer et al., 2001: Evidence Rating: I)

Garlic

There are no formal recommendations for use of garlic to reduce CVD. Aged garlic extract may be recommended to women to decrease platelet aggregation and adhesion. (Steiner & Li, 2001; Agency for Healthcare Research and Quality, 2000: Evidence Rating: I)

Soy/Isoflavones

While there are no formal recommendations regarding the use of soy or isoflavones, current data, which report the potentially beneficial effects of soy on cholesterol levels, should be discussed with women. (Baum et al., 1998; Crouse et al., 1999; Nestel et al., 1999; Hermansen et al., 2001: Evidence Rating: I)

Pharmaceuticals, Biochemical Assays, and Complementary Therapies

Estrogen

1. The combined hormone therapy (HRT), estrogen and progesterone, is not recommended for prevention of CVD in women. (Humphrey, Chan, & Sox, 2002; "Risks and benefits of estrogen plus progestin," 2002: Evidence Rating: I)
2. Women who desire HRT for perimenopausal symptoms should be provided complete information about the benefits and risks of HRT and prescribed the lowest effective dose when HRT is requested. Data is inconclusive about the cardiovascular (CV) benefits of unopposed estrogen. (Grodstein et al., 2000: Evidence Rating: II-2)

Aspirin

1. Acetylsalicylic acid (ASA, aspirin) is not currently recommended as preventive therapy for women at low risk for CHD.
   (Note: ASA 75-325 mg., chewed with water, is still accepted practice for acute myocardial infarction for both men and women.)
   (US Preventive Services Task Force, 2002: Evidence Rating: III)

2. Low-dose aspirin (75-160mg/d) may be recommended for women at higher risk for CHD who tolerate aspirin and have been counseled on the risks and benefits of preventive therapy. (Hayden et al., 2002: Evidence Rating: I) (US Preventive Services Task Force, 2002; Pearson et al., 2002: Evidence Rating: III)

Massage

Massage may be recommended, along with other lifestyle changes such as diet and exercise, as a stress reduction strategy. (Hernandez-Reif et al., 2000: Evidence Rating: II-1)

Biofeedback

Biofeedback may be recommended to reduce blood pressure during the first 6 months of attempted lifestyle changes. (Yucha et al., 2001: Evidence Rating: III)

Homocysteine Levels

There is currently no formal recommendation for general screening of homocysteine levels. However, screening of homocysteine levels may be beneficial in evaluating women with a strong family history of CVD or who have normal lipid levels with other CVD risk factors. (Gotto et al., 2000: Evidence Rating: I) (Ridker et al., 2000; Sutton-Tyrrell et al., 1997; "Homocysteine and risk of ischemic heart disease," 2002: Evidence Rating: II-2) (Hackam, Peterson, & Spence, 2000: Evidence Rating: II-3) (Malinow, Bostom, & Krauss, 1999: Evidence Rating: III)

C-Reactive Protein (CRP)

1. There is insufficient evidence to recommend population-wide routine screening of CRP levels. (Ridker et al., 2000; Ridker et al., 2002: Evidence Rating: II-2)
2. Women at 10 to 20% risk of CHD per 10 years should be considered for hs-CRP testing at the discretion of the health care provider.
    a. Hs-CRP assays should be performed on two different occasions, preferably two weeks apart, either fasting or non-fasting in clinically stable women.
    b. When hs-CRP levels are >10mg/L, test for sources of infection.

    (Ridker et al., 2002; Ridker et al., 2003: Evidence Rating: II-2) (Pearson et al., 2003: Evidence Rating: III)

Definitions:

I: Evidence obtained from at least one properly designed randomized, controlled trial or meta-analyses of randomized, controlled trials.

II-1: Evidence obtained from well-designed controlled trials without randomization.

II-2: Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group.

II-3: Evidence from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of the introduction of penicillin treatment in the 1940s) could also be regarded as this type of evidence.

III: Opinions of respected authorities, based on clinical experience, descriptive studies or reports of expert committees.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

Each clinical practice recommendation presented in the Guideline is supported by a referenced rationale using American Psychological Association format and includes the quality of evidence ratings for each reference. The type of supporting evidence is identified and graded for each recommendation (see "Major Recommendations").

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Nurses are in an excellent position to improve women's knowledge about cardiovascular disease (CVD) and encourage preventive health measures. Moreover, the effectiveness of cardiovascular health education delivered by nurses has been demonstrated. Clearly, greater attention to primary prevention is warranted, and this Guideline provides evidence and tools that may help reduce both cardiovascular morbidity and mortality for all women through primary prevention.

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

The guideline was developed for the Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN) as a resource for nursing practice. The guideline does not define a standard of care, nor is it intended to dictate an exclusive course of management. It presents general methods and techniques of practice that are currently acceptable, based on current research, and used by recognized authorities. Proper care of individual patients may depend on many individual factors as well as professional judgment. The information presented is not designed to define standards of practice for employment, licensure, discipline, legal, or other purposes. Variations and innovations that are consistent with law and that demonstrably improve the quality of patient care should be encouraged.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) Guideline offers a framework in which to provide evidence-based nursing care and yet offers flexibility to develop an individualized plan of care for each woman. An important component of the nurse's role is recognizing an individual woman's potential barriers to implementing heart-healthy behaviors. In addition, the nurse will need to tailor recommendations to fit her or his scope of practice, state and regional licensure, and competing demands of her or his practice setting.

The Guideline presents an outline of optimal care components for which evidence is available. The degree to which implementation of particular Guideline elements is necessary is a matter of nursing and medical judgment based on evaluation of factors such as the population served and an individual's physical and psychological needs.

In addition, the Guideline developers provide a Quick Care Guide (Cardiovascular Health for Women: Primary Prevention) to serve as a quick reference for the clinician.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN). Cardiovascular health for women: primary prevention. Evidence-based clinical practice guideline. 2nd ed. Washington (DC): Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN); 2003. 57 p. [157 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2001 (revised 2003)

GUIDELINE DEVELOPER(S)

Association of Women's Health, Obstetric, and Neonatal Nurses - Professional Association

SOURCE(S) OF FUNDING

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GUIDELINE COMMITTEE

Evidence-based Clinical Practice Guideline Development Team
Evidence-based Clinical Practice Guideline Revision Team

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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2003: Kathleen B. King, RN, PhD, FAAN (Co-Chair); Claudia Reid Ravin, CNM, MSN (Co-Chair); Susan K. Bennett, MD, FACC; Kathy Berra, MSN, ANP-C, FAAN; Mary Ann Faucher, CNM, PhD; Elsa-Grace V. Giardina, MD; Susan Kendig, RNC, MSN, WHCNP; Nancy Loving; Sue A. Woodson, RNC, CNM, MSN

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN). Cardiovascular health for women: primary prevention. Evidence-based clinical practice guideline. Washington (DC): Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN); 2001. 50 p.

GUIDELINE AVAILABILITY

Electronic copies: Not available at this time.

Print copies: Available by contacting the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), 2000 L Street, N.W. Suite 740, Washington, D.C. 20036; Phone: (800) 354-2268; Web site: www.awhonn.org/store.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Cardiovascular health for women: primary prevention. Quick care guide. Washington (DC): Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), 2003. 2 p.

Electronic copies: Not available at this time.

Print copies: One copy is included with purchase of the guideline; not available for single purchase. Contact the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), 2000 L Street, N.W. Suite 740, Washington, D.C. 20036; Phone: (800) 354-2268; Web site: www.awhonn.org.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on March 15, 2004. The information was verified by the guideline developer on June 4, 2004.

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